IMPERIAL BUREAU OF MYCOLOGY
30 OCT 1934
INSTITUTE

PRESS BULLETIN 462 *April, 1934*

UNIVERSITY OF FLORIDA
AGRICULTURAL EXPERIMENT STATION
WILMON NEWELL, Director
GAINESVILLE, FLORIDA

PAPAYA LEAF SPOT

By ERDMAN WEST
Mycologist, Florida Experiment Station

Papayas, or pawpaws as they are sometimes called, have increased in importance as a Florida fruit. Not only are there more commercial plantings but more people have put out a few trees in the back yard or on a vacant lot. With this increase in the distribution of the plants, the spread of fungous pests of the papaya is facilitated in a similar ratio. One of the serious diseases of papayas is the leaf spot caused by the fungus *Pucciniopsis caricae.*

SYMPTOMS

The disease appears first as a pale spot on the under side of the expanded leaf. As the spot enlarges, the pale or yellowish color becomes apparent also on the upper side of the leaf. By the time the spot is a quarter of an inch in diameter, the spores or fruiting bodies of the fungus appear. These occur in tiny, raised, brownish-black dots on the under side of the spot, very frequently arranged in several to many concentric rings. These black dots are composed of myriads of spores, each one capable of starting a new spot when transferred in water to a healthy leaf. One spot is capable of producing enough spores to infect a whole plant heavily, if conditions are favorable for their germination.

Where only a very few of these spots occur on a single leaf, a relatively small amount of harm is done to the plant. However, the spots may increase rapidly in numbers, even under favorable growing conditions for the papayas. Soon the lower sides of the foliage may become an almost solid mass of the raised, dark spore masses. Badly affected leaves become yellow, die and later fall off. Each leaf so affected cuts down the working area of the plant and has a corresponding deleterious effect on the size, quality and yield of the fruits.

No strains of the papaya seem to be resistant to the disease. It is reputed to be more severe on weak or stunted plants, but this is very probably due to the fact that such plants are less able to endure any further diminution in the working area of

the leaves and, consequently, show signs of deterioration sooner. The most vigorous and rapid growing plants may develop a severe case of the trouble.

The disease is most serious on seedlings and young plants. At this stage a considerable defoliation of the plant is serious, because it results in the stunting and hardening of the young plant. Plants so affected seldom recover sufficiently to develop into large vigorous plants capable of producing a full crop.

CONTROL

Fortunately, the control of papaya leaf spot is not difficult. The first step consists in removing heavily infected leaves from the trees and from the ground around the trees. These should be burned or buried deeply. After this infective material has been removed, a fungicide should be applied. Bordeaux mixture 3-3-50 strength has proved satisfactory for this purpose, if some good sticker is used in it. Calcium caseinate is very satisfactory for this purpose. Thorough applications of the spray should be made, especially to the under sides of the leaves where the spots are most conspicuous and the spores or fruiting bodies develop.

A single application of the fungicide is not adequate for the control of the trouble, but the exact number necessary cannot be stated precisely. The plants must be sprayed often enough to keep the newly expanded leaf surfaces covered with a protective coating. This means spraying about once a week under normal growing conditions. Applications should be continued as long as there are any signs of the disease on any of the trees in the planting. It may take six weeks or more to control the disease completely.

Young plants should be watched carefully for symptoms of the disease. Bordeaux should be applied at the first sign of the trouble to prevent the possibility of stunting of the plants by defoliation.

Larger plants approaching the fruiting stage should be watched carefully, too, that the disease may be controlled before the fruits appear on the plants. When applying the spray to bearing plants, it is impossible to prevent the staining of the fruits with the fungicide. Such staining cannot be removed from such soft-skinned fruits without injuring them. The presence of the spray stain on the ripe fruits renders them less attractive when offered for sale and results in a reduced price. Considering all of these points, it is very much to the grower's advantage to take precautionary measures on the first appearance of this trouble.